

PATENT CLAIMS

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1. A borosilicate glass of high chemicals resistance, characterized by a composition (in % by weight, based 5 on oxide) of:

	SiO ₂	70 - 77
	B ₂ O ₃	6 - < 11.5
	Al ₂ O ₃	4 - 8.5
10	Li ₂ O	0 - 2
	Na ₂ O	4 - 9.5
	K ₂ O	0 - 5
	with Li ₂ O + Na ₂ O + K ₂ O	5 - 11
	MgO	0 - 2
15	CaO	0 - 2.5
	with MgO + CaO	0 - 3
	ZrO ₂	0 - < 0.5
	CeO ₂	0 - 1

20 and, if appropriate, standard refining agents in standard amounts.

2. The borosilicate glass as claimed in claim 1, characterized by a composition (in % by weight, based 25 on oxide) of:

	SiO ₂	70.5 - 76.5
	B ₂ O ₃	6.5 - < 11.5
	Al ₂ O ₃	4 - 8
30	Li ₂ O	0 - 1.5
	Na ₂ O	4.5 - 9
	K ₂ O	0 - 5
	with Li ₂ O + Na ₂ O + K ₂ O	5.5 - 10.5
	MgO	0 - 1
35	CaO	0 - 2
	with MgO + CaO	0 - 3
	ZrO ₂	0 - < 0.5
	CeO ₂	0 - 1

and, if appropriate, standard refining agents in standard amounts.

3. The borosilicate glass as claimed in claim 1 or 2,
5 characterized in that it additionally contains (in % by weight, based on oxide):

SrO	0 - 1.5
BaO	0 - 1.5
10 with SrO + BaO	0 - 2
ZnO	0 - 1.

4. The borosilicate glass as claimed in at least one of claims 1 to 3, characterized in that it additionally 15 contains (in % by weight, based on oxide):

Fe ₂ O ₃ + Cr ₂ O ₃ + CoO	0 - 1
TiO ₂	0 - 3.

20 5. The borosilicate glass as claimed in at least one of claims 1 to 4, characterized in that, apart from inevitable impurities, it is free of As₂O₃ and Sb₂O₃.

25 6. The borosilicate glass as claimed in at least one of claims 1 to 5, having a coefficient of thermal expansion $\alpha_{20/300}$ of between > 5 and $6.0 \times 10^{-6}/K$, in particular between > 5.3 and $5.9 \times 10^{-6}/K$, and a working point V_A of at most 1180°C.

30 7. The use of the borosilicate glass as claimed in at least one of claims 1 to 6, as sealing glass for Fe-Co-Ni alloys.

35 8. The use of the borosilicate glass as claimed in at least one of claims 1 to 6 as instrument glass for laboratory applications and for the construction of chemical installations.

9. The use of the borosilicate glass as claimed in at least one of claims 1 to 6 as primary packaging material for pharmaceuticals, for example as ampoule glass.

ABSTRACT

The invention relates to a borosilicate glass of high chemicals resistance, having a composition (in % by weight, based on oxide) of SiO₂ 70-77; B₂O₃ 6 - < 11.5; Al₂O₃ 4-8.5; Li₂O 0-2; Na₂O 4-9.5; K₂O 0-5; with Li₂O + Na₂O + K₂O 5-11; MgO 0-2; CaO 0-2; with MgO + CaO 0-3; ZrO₂ 0-<0.5; CeO₂ 0-1.

The glass is particularly suitable for use as primary packaging material for pharmaceuticals.